

TRANBERG DRAIN PLUG

TEF 731 Ex eb/ Ex tb Drain Plug

Document properties (TUM7152)

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0	First issue	11.08.2021	CKR
1	Minor changes	15.12.2021	CKR

Installation and operating manual

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Warnings and risk levels

DANGER

Non-compliance with the instruction results in risk of severe or fatal injuries to persons

WARNING

Non-compliance with the instruction may result in risk of severe or fatal injuries to persons

CAUTION

Non-compliance with the instruction may result in risk of injuries or damage to equipment

NOTICE

Non-compliance with the instruction may result in reduced lifetime of equipment, malfunctions etc.

General information

Before installation, make sure to read and understand this installation and operating manual.

Observe national assembly and installation regulations.

Always contact the manufacturer if anything is unclear, or if you notice any faults on the product or in this document.

This installation and operating manual shall be available to anyone operating, installing, inspecting, modifying or repairing the equipment.

Safety precautions

Note that changes made to the product and/or installation of components, which do not conform to the approval, may be a safety violation. The manufacturer is not responsible for such activity.

For your health and safety, always use safety gear suited for the task. Be certain to follow codes, regulations and/or specific procedures, which relates to the installation.

To ensure IP66, make sure that the O-ring seal or the PTFE gasket is in good contact with the enclosure wall. There shall be no gap between the plug and the enclosure wall when an O-ring is used. To ensure this we recommend a chamfer of the threads in any threaded enclosure of 1-1.5mmx45°. If the chamfer is too small, the insertion of the plug may be difficult or impossible, and if the chamfer is too large, the O-ring seal may not seal properly with the enclosure wall.

The installation personnel are responsibility to verify that the seal after installation is sufficient for both clearance holes and threaded holes.



Marking and intended use

DANGER
Not for use in Zone 0 or 20
CAUTION
Not intended for use in "these" conditions (Where mud may be present, on helidecks, underground, direct sunlight, heavy vibrations, high risk of impact, harsh cleaning agents, high pressure washer etc.)

CE-marking: CE 0470

ATEX Certificate: DNV 21ATEX 03413

IECEX Certificate: IECEX DNV 21.0089

Ex Protection marking:  II 2 G Ex eb IIC Gb /  II 2 D Ex tb IIIC Db

For use in Explosive Atmospheres Zone 1, Zone 2 & Safe Area

For use in Areas with Combustible Dust Zone 21 & Zone 22

For use in marine/industrial/onshore/offshore/mud/drilling/helideck etc. areas

Special conditions for safe use

DANGER

Special conditions for safe use are critical conditions to maintain the explosion protection of the equipment. These shall be adhered to in all cases and under all circumstances.

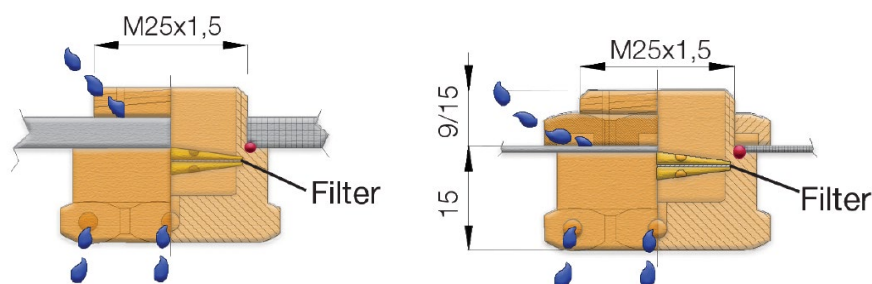
- According to this manual

Technical data

Property	Value
Explosion protection:	• II 2 G Ex eb IIC Gb Ⓔ II 2 D Ex tb IIIC Db
Certificates:	DNV 21ATEX 03413 IECEX DNV 21.0089
Ambient temperature:	-60°C...+130°C
Ingress protection:	IP66
Thread length:	9mm and 15mm
Material housing:	Brass, Nickel Plated Brass or Stainless Steel
Material O-ring:	Silicone shore A 70 Red
Terminals	Screw terminals, 1-4mm ²
Depth of threads in explosion proof enclosure with volume less than 100dm ³ :	Minimum 5mm
Depth of threads in explosion proof enclosure with volume more than 100dm ³ :	Minimum 8mm

Product description

TEF 731 drain plug prevents condensation and drains water whilst maintaining relevant protection level. It can be used outdoor or indoor and is suitable for use in hazardous areas Zone 1, Zone 2 and Safe Area. The drain plug is also certified with dust protection and is suitable for areas with combustible dust, Zone 21 and Zone 22.



Content in box

- The product is fully assembled, and ready for installation.

Mounting and installation

DANGER

Incorrect mounting and installation may lead to explosion risks, risk of falling objects, risk for electric shock and risk for equipment malfunction. In turn, this can lead to severe damage and/or injuries.

Conditions for holes

Conditions for holes

	Threaded holes	Clearance holes
1 Tolerance class	Mxx (6H) is required for Ex d and recommended for Ex e. Tolerance class for Ex e is max. 6G/6H. Ref. ISO 965-1 and ISO 965-3	Nominal thread size -0,0mm/ +0,2mm
2 Enclosure material limitations	Brass glands should not be installed in zinc or aluminum enclosures outdoor or in humid environments.	Brass glands should not be installed in zinc or aluminum enclosures outdoor or in humid environments.
3 Enclosure interface sealing method	O-ring	O-ring
4 Maximum surface roughness of the enclosure face for sealing	Ra 6,4µm, better than 3,2µm is recommended.	Ra 6,4µm, better than 3,2µm is recommended.
5 Thickness range for the enclosure wall	Less than the thread length of the cable gland.	Thread length minus 6mm (Thread L 9mm -6mm = 3mm & Thread L 15mm - 6mm= 9mm)
6 Perpendicularity	Plus/minus 1° or 0,2mm at the outer edge of the gland, whichever is SMALLER.	Plus/minus 1° or 0,2mm at the outer edge of the gland, whichever is SMALLER.
7 Permitted use and location of any earth tags	Earth tags should be installed on the inside of the enclosure. Thickness of tag and lock nut to be included in the thickness consideration in point 5.	Earth tags should be installed on the inside of the enclosure. Thickness of tag and lock nut to be included in the thickness consideration in point 5
8 For chamfered holes	The outermost edge must not have a greater diameter than the center of the O-ring.	The outermost edge must not have a greater diameter than the center of the O-ring.
9 Lock nuts	Use only TRANBERG® locking nuts, or other types recommended by the manufacturer	Use only TRANBERG® locking nuts, or other types recommended by the manufacturer

Mounting

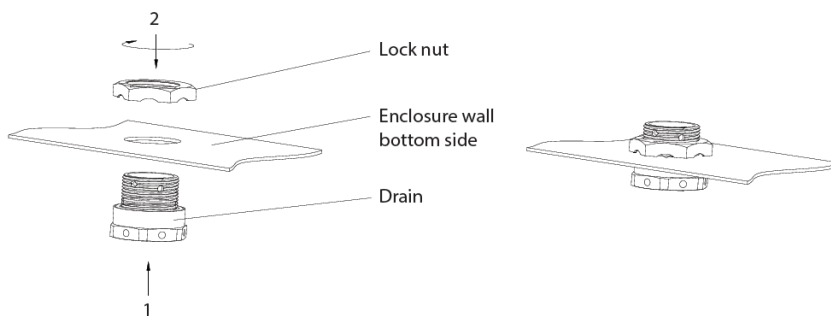
Before installing the component, ensure that:

- The plug is installed according to the instructions required by the standard and will not invalidate the specific characteristics of the Ex protection of the electrical equipment on which they are mounted.
- The plug is not damaged.
- The o-ring/gasket is not damaged and that the gasket bearing areas are flat.

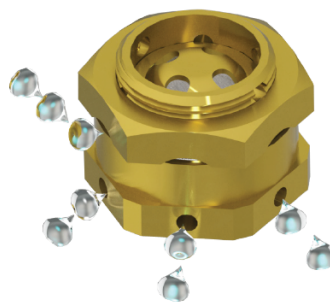
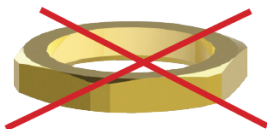
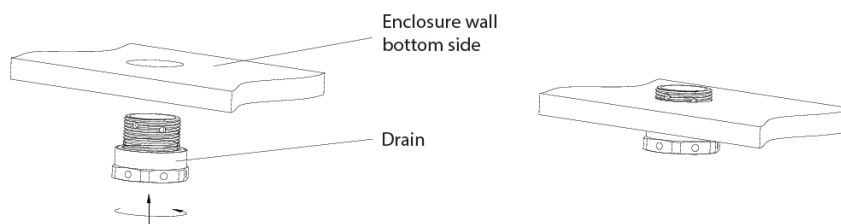
Installation

1. Screw the plug into the enclosure and tighten it with a wrench. Tightening torque for M25 drain plug is 25 Nm.
2. The drain plug has to be mounted on the bottom side of the enclosure.
3. When used in a sheet metal enclosure, use a special drain lock nut from R. Stahl Tranberg inside the enclosure to fasten the plug.
4. Only a lock nut special made for the drain plug must be used.
5. When used in a threaded hole screw the drain plug into the hole and tighten it firmly. The drain plug must have a minimum of 5 threads engaged, otherwise a drain lock nut must be used.
6. Use a wrench to fully tighten the plug, tightening torque 25Nm for M25 drain plug.

Assembly in hole without threads:



Assembly in hole with threads:



Maintenance and cleaning

The product should be inspected according to company routines and/or relevant to national regulations for your country.

Disposal

CAUTION

This equipment or part of this equipment is considered EE-Waste, and shall be handled accordingly

- Observe national and local regulations and statutory regulations regarding disposal
- Separate materials when sending it for recycling
- Ensure environmentally friendly disposal of all components
- No component or packaging shall end up in the ocean during any stage of the product's lifetime

Compliance/Conformity

- DNV 21 ATEX 03413 (Doc No. TPC7221)
- IECEx_DNV_21.0089_000 (Doc No. TPC7222)
- Applicable standards:
 - EN IEC 60079-0:2018
 - EN 60079-7:2015
 - EN 60079-31:2014
 - IEC 60079-0:2017
 - IEC 60079-31:2013
 - IEC 60079-7:2017
- Regulations, directives, etc.:
 - Directive 2014/34/EU
- "EU DoC:
 - TDC7223